

Amendment to the Claims:

1. (Currently Amended) [[A]] The method of claim 2 wherein
the registration artifact for use in registering fluoroscopic images comprising includes:
a plurality of the radio-opaque fiducials carried by a radio-transparent
support structure in a known geometric relationship; and

5 a plurality of the ~~spatially~~ trackable markers depending from the
support structure in a known geometric relationship to the fiducials[[:]]
~~wherein the registration artifact is adapted for being held within a field~~
~~of view of an imaging device, without attachment to the patient.~~

2. (Currently Amended) A method for registering fluoroscopic
images comprising:

~~providing positioning~~ a registration artifact in a first location, ~~wherein~~
the registration artifact ~~includes~~ including a plurality of radio-opaque fiducials
5 arranged in a known geometric relationship and a plurality of trackable markers
disposed in a known geometric relationship to the fiducials;

~~capturing a first fluoroscopic image of a patient and~~ the radio-opaque
fiducials with the registration artifact in the first location:

~~determining the positions of the registration artifact fiducials in the~~
10 ~~first fluoroscopic image with respect to a known coordinate frame by~~ determining
positions of the trackable markers with respect to a known coordinate frame when the
registration artifact is in the first location using a tracking system, the tracking system
being separate from the patient and ~~the a~~ fluoroscope; and

determining positions of the radio-opaque fiducials in the first
15 fluoroscopic image with respect to the known coordinate frame of the determined
positions of the trackable markers;

relocating the registration artifact to a second location:

capturing a second fluoroscopic image of the patient and the
radio-opaque fiducials with the registration artifact in the second location:

20 ~~determining positions of the registration artifact fiducials in the second~~
~~fluoroscopic image with respect to the known coordinate frame by~~ determining

positions of the ~~optically~~ trackable markers with respect to the known coordinate frame when the registration artifact is in the second location using the tracking system; ~~and~~

25 determining positions of the radio-opaque fiducials in the second fluoroscopic image with respect to the known coordinate frame of the determined positions of the trackable markers;

 registering the first and second fluoroscopic images using the positions of the fiducials in each fluoroscopic image and the determined positions, ~~within~~ with
30 respect to the known coordinate frame, of the trackable markers.

3. (Currently Amended) The ~~registration-artifact~~ image guided surgery system of claim [[1]] 7, wherein the ~~optically~~ trackable markers include an infrared emitting diode (IRED).

4. (Currently Amended) The ~~registration-artifact~~ image guided surgery system of claim [[1]] 7, wherein the trackable markers include a reflective sphere to reflect infrared radiation.

5. (Cancelled)

6. (Currently Amended) The ~~registration-artifact~~ image guided surgery system of claim [[1]] 7, wherein the trackable markers include optically trackable markers.

7. (Currently Amended) An image guided surgery system comprising:

 a registration artifact, including a plurality of radio-opaque fiducials associated with a radio-transparent body in a known geometric relationship, and a
5 plurality of ~~spatially~~ trackable markers depending from the registration artifact in a known geometric relationship to the fiducials;

a tracking system for determining positions of the trackable markers within a known reference frame, the tracking system being separate from the a patient and a fluoroscope; and

5 a computer in communication with the tracking system for receiving information on the positions of the optically trackable markers, wherein the computer is ~~adapted~~ programmed to:

10 register first and second images of a the patient and the registration artifact, the registration artifact being disposed in a first location in the first image and a second location in the second image, and

~~wherein the computer is adapted to~~ compensate for changes in position of the registration artifact from the first location to the second location when registering the first and second images.

8. (Previously Presented) The image guided surgery system of claim 7, wherein at least one of the first and second locations of the registration artifact is independent of the patient.

9. (Previously Presented) The method of claim 2, wherein at least one of the first and second locations of the registration artifact is independent of the patient.

10. (Cancelled)

11. (New) The image guided surgery system of claim 7, further including:

5 a patient table, the registration artifact including a mounting assembly for mounting the artifact to the table at a selectively adjustable location relative to the patient.

12. (New) The image guided surgery system of claim 11, further including:

a fluoroscope movably mounted relative to the table.

13. (New) The image guided surgery system of claim 11, further including a surgical instrument carrying a plurality of trackable markers.

14. (New) An image guided surgery system comprising,
a registration artifact including a plurality of imageable fiducials arranged in a known geometric pattern and a plurality of trackable markers disposed in a known geometric relationship to the fiducials;

5 a fluorographic camera which is movably mounted to capture a first fluoroscopic image of a patient and the imageable fiducials with the registration artifact in a first location and a second fluorographic image of the patient and the imageable fiducials with the registration artifact in a second location;

10 a tracking system which determines positions of the trackable markers with respect to a known coordinate frame, the tracking system being separate from the patient and a fluoroscope; and,

a computer programmed to:

15 determine positions of the trackable markers with respect to the known coordinate frame when the artifact is in the first location using an output of the tracking system,

determine positions of the trackable markers with respect to the known coordinate frame when the artifact is in the second location using the output of the tracking system,

20 determine positions of the imageable markers in the first and second fluorographic images from the determined positions of the trackable markers in the first and second images and the known relationship between the imageable fiducials and the trackable markers, and

registering the first and second fluorographic images.